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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,009	07/31/2003	Chongying Xu	ATMI-537-CIP	9371
25559	7590	12/21/2004	EXAMINER	
ATMI, INC. 7 COMMERCE DRIVE DANBURY, CT 06810			DANG, PHUC T	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/632,009

Applicant(s)

XU ET AL

Examiner

PHUC T DANG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on election October 18, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-108 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 103-107 is/are allowed.
- 6) ☒ Claim(s) 1-6, 52-57 and 108 is/are rejected.
- 7) ☒ Claim(s) 7-51 and 58-102 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 122403.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. This application is a CIP of 10/303,479 filed on November 25, 2002 which claims benefit of 60/345,738 filed on December 31, 2001.

### **Election/Restrictions**

2. Examiner withdrawn the restriction requirement as requested by Applicant's response to the restriction filed on October 18, 2004.

Claims 1-108 are currently pending in the application for examining at this time.

### **Oath/Declaration**

3. The oath/declaration filed on July 31, 2003 is acceptable.

### **Information Disclosure Statement**

4. The office acknowledges receipt of the following items from the applicant:  
Information Disclosure Statement (IDS) filed on December 24, 2003.

### **Specification**

5. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### **Claim Rejections-35 USC § 112**

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the application regards as his invention.

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6. Claims 5-6 and 56-57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

In claims 5-6 and 56-57, the terms "said supercritical fluid" and "said precursor" are insufficient antecedent basis for this limitation in the claim.

#### **Claim Rejections - 35 USC § 102**

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-4 and 52-55 are rejected under 35 U.S.C. 102 (e) as being anticipated by Carbonell et al., hereinafter "Carbonell" (U.S. Patent No. 6,652,920 B2).

Regarding claims 1 and 52, Carbonell discloses a deposition composition and a method for depositing material on a substrate, the deposition composition comprising a supercritical fluid and a precursor of the material to be deposited on the substrate [col. 13, lines 4-15].

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Regarding claims 2-3 and 53-54, Carbonell discloses the supercritical fluid comprises a fluid selected from the group consisting of: carbon dioxide, oxygen, argon, krypton, xenon, ammonia, methane, ethane, methanol, ethanol, isopropanol, dimethyl ketone, sulfur hexafluoride, carbon monoxide, dinitrogen oxide, forming gas, hydrogen, and mixtures thereof [col. 13, lines 4+].

8. Claim 108 is rejected under 35 U.S.C. 102 (b) as being anticipated by Yadav et al., hereinafter "Yadav" (U.S. Patent No. 5,952,040).

Yadav discloses a method of forming electrodes on a semiconductor substrate comprising contacting the substrate with an electrode material precursor in a supercritical fluid, to deposit electrode material on the substrate [col. 6, lines 50-56].

#### **Allowable Subject Matter**

9. Claims 103-107 allowed.

The following is a statement of reason for the indication of allowable subject matter:

Claims 106 and 107 are considered allowable since the prior art of record and the considered pertinent to the applicant's disclosure does not teach or suggest the claimed invention. None of the prior art of record disclose or teach the claimed invention having a method of forming a low k organosilicate film on a substrate, comprising contacting the substrate with a deposition composition comprising an organosilicon compound and a supercritical fluid, to deposit a silicon-containing material on the substrate, and vitrifying the silicon-containing material to form the low k organosilicate film as a porous organosilicate film

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on the substrate as disclosed in claim 103 and a method comprising a barrier layer precursor and a supercritical fluid, and continuing the contacting while flowing the deposition composition into the contacting zone, and discharging contacted deposition composition from the contacting zone, to effect growth of the barrier layer to a predetermined thickness as disclosed in claim 106 and a method for contacting the substrate with a copper metallization precursor in a supercritical fluid, to deposit copper on the substrate as disclosed in claim 107.

Claims 7-51, 58-102 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### **Conclusion**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuc T. Dang whose telephone number is (571) 272-1776. The examiner can normally be reached on 8:00 am-5:00 pm.

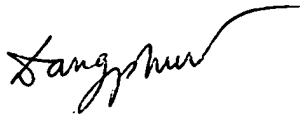
11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Nelms can be reached on (571) 272-1787. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and After Final communications.

12. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Phuc T. Dang

PD

A handwritten signature in cursive script, appearing to read "Phuc T. Dang", with a long horizontal flourish extending to the right.

Primary Examiner

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